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ABSTRACT

Several studies have indicated that children frequently and actively attempt to manipulate adult behavior. Yet children have not been routinely used as behavioral change agents in the classroom. To study the extent to which teachers' evaluations of students' behavior and academic progress could be changed, 67 male high school students participated in a behavior modification training program. All of the students were identified as having behavior or learning problems prior to the training. A post-test evaluation after the 12 sessions showed that students trained in the use of behavior management techniques positively influenced teachers' academic and behavioral assessments of students. The findings suggest that training students in behavior modification techniques represents a viable means by which students can take an active role in determining the quality of their classroom experiences. (Author/JAC)

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SOME EFFECTS OF TRAINING STUDENTS AS MANAGERS OF A PROGRAM TO INDIRECTLY MODIFY ACADEMIC AND BEHAVIORAL TEACHER RATINGS OF STUDENTS

A Dissertation

Presented to

the Faculty of the Graduate School

Memphis State University

In Partial Fulfillment

of

the Requirements for the Degree

Doctor of Education

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To the Graduate Council:

I am submitting herewith a dissertation written by Stephen John Oehmen entitled, "Some Effects of Training Students as Managers of a Program to Indirectly Modify Academic and Behavioral Teacher Ratings of Students." I recommend that it be accepted for 12 hours of credit in partial fulfillment of the requirements for the degree Doctor of Education, with a major in Personnel Services.

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DEDICATION

This work is dedicated to my family:

My wife, Susan, and my sons, Christopher and Jeremy.

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Chapter I

NATURE AND SCOPE OF THE PROBLEM

Chapter I provides an overview of the nature and scope of the problem. The purpose of the study is given. The need for the study is outlined with respect to child attempts to influence adult behavior, the difficulties teachers may face as primary behavior change agents in the classroom, and the efficiency with which children perform as primary behavior change agents. The theoretical impact of the study is discussed. The development of the training procedure and the results of the pilot program are presented. A statement of the problem is given, with associated questions and hypotheses. Terms used in the study are defined. Finally, limitations, assumptions and contributions of the study are presented.

Purpose

The purpose of this study was to determine the effects of a training program in teaching behavior management skills to academic, behavioral, and academic-behavioral high-risk, male secondary students in order to positively alter selected teachers' academic and behavioral evaluations of such

students.

Need for the Study

Baranowski (1978) reported that children typically attempt to influence adult behavior more often than adults suppose. Moreover, adults do not appear to accurately perceive the actual number of times that such attempts are made by children.

Benassi and Larson (1974) asserted that all relationships are sustained by behavioral reciprocity. They reported that this appears to be particularly true of the child-adult relationship within the family. These authors argued that, because of the inherent behavioral balance created and maintained between adult and child by this reciprocity, either the child or the adult is capable of altering the relationship to make it more or less mutually satisfactory.

The foregoing studies seem to indicate that children frequently and actively attempt to manipulate adult behavior. Furthermore, this manipulation can be understood as normal since the child, as a contributing member of the family relationship, affects the overall quality of the relationship.

It may be concluded then that children could be appropriately trained as change agents for adult behavior. It

appears, however, that the efficacy of children in the role of modifiers of adult behavior seems to be an issue which has received limited attention in the published research.

Problems of Teachers as Behavior Change Agents

Although the literature seems replete with examples of teachers as successful change agents in the classroom, questions have arisen as to the ability of typical classroom teachers to utilize behavior management techniques across a broad array of problem behaviors (McNamara, 1968; McNamara, 1971; Nelson, 1969; Vane, 1972). In some cases, resistance to the use of behavior modification techniques has proven itself to be an obstacle to the implementation of such programs in the classroom (Baker, 1971; Borg, 1969; Derevensky and Rose, 1978; Edgar, 1972; Kotcher and Doremus, 1972; Webster and Mendro, 1974; Wetzel, 1970). It appears that empirical evidence exists that the classroom teacher may not always be the best choice as primary change agent for the purpose of creating and maintaining a positive classroom learning environment through the use of behavior modification techniques.

The Student as Behavior Change Agent

Results of reported research indicate that students have demonstrated expertise as effective change agents for their own behavior (Chandler and Dinero, 1977; Clement, 1973; Duncan, 1969; Groveman, 1975; Jones, 1968; Sanders,

1978). Positive behavioral change has been achieved either with or without teacher or consultant assistance in the maintenance of the behavioral self-change program (Birkimer and Brown, 1979; Duncan, 1969).

Students seem to have been infrequently called upon to perform the task of modifying their own behavior, although the rationale for doing so has received attention in the reported research (Benassi and Larson, 1974; Davis, 1979; Drabman, Spitalnik and O'Leary, 1973; Duncan, 1969; Halfacre, 1974; Kratochvil, 1970; Watson and Hall, 1977). Students who have performed successfully in the role of self-change agent have included seriously hyperactive students (Watson and Hall, 1977), elementary pupils (Birkimer and Brown, 1979; Davis, 1979) and secondary students (Clement, 1973).

School age children have also demonstrated that they can effectively manage programs to modify peer behavior in the classroom (Briskin and Anderson, 1973; Carstens and Young, 1979; Greenwood, 1972; Matheny, Anderson and Blue, 1978; Nelson, Worrell and Polsgrove, 1973; Rouse and Farb, 1974; Solomon, 1972; Toner, 1977). Such students have effectively utilized skills learned in the use of behavior management training programs to maintain positive behavior among their age peers with or without adult support or supervision (Drass and Jones, 1971;

Schultz and Lambert, 1972). Students trained in the use of behavior modification have also demonstrated initiative and expertise with respect to generalizing behavior management systems to other students or other problem behaviors (Briskin and Anderson, 1973; Carstens and Young, 1979; Greenwood, 1972; Solomon, 1972).

In summary, it appears that children independently influence adult behavior (Baranowski, 1978). The teachers may or may not be the most appropriate choice as primary change agent in the classroom setting (Kotcher and Doremus, 1972). Conversely, students have demonstrated the capacity to act competently as change agents for the management of their own behavior (Birkimer and Brown, 1979) as well as that of their peers (Drass and Jones, 1971). While students have shown facility as primary change agents in behavior management programs, they have not yet been routinely utilized as behavior change agents in the classroom for the purpose of changing teacher behavior (Tacke and Hofer, 1979; Thomas, 1969).

Theoretical Impact

One possible disadvantage of many counseling approaches appears to be the lack of empirical substantiation concerning the efficacy of a given model. Studies which

do assess the utility of a given model appear to rely on the perceptions of the client regarding the helpfulness of the counseling encounter (Ohlsen, 1970). Ohlsen argued, however, that the appropriate criterion for judging counseling effectiveness lies in the assessment of client behavior in the world outside the counselor's office.

One aspect of this study which attempted to address the concern of Ohlsen was that the dependent variables used were assessed by the teachers directly involved in the education of the students. These teachers exercised direct and indirect control over these students, so it was the teachers' evaluations of the students' progress which constituted the evidence of the viability of the training procedure.

Development of the Program Format

The training program, developed by the trainer, is a function of ten years' development in a variety of settings. Its current operation is perhaps best understood within the context of its historical development.

1970-1971

The first effort to establish the program occurred in a rural, Appalachian school district in Southeastern Ohio. The students involved were Senior High Educable

Mentally Retarded students who were experiencing anxiety about having to work in a larger town to satisfy their work-study requirements for graduation.

It was decided that a potentially effective way of dealing with the students' anxieties might be to train them in the use of behavior modification techniques to use on their on-site work supervisors. In groups meeting twice weekly, the work-study students were taught the principles of operant conditioning and reinforcement procedures. In this way, the students learned to help shape a positive relationship with the supervisor, primarily by being able to reinforce the supervisor for positive behavior toward the student.

1972-1975

The program was next utilized in a small, private school for children with learning disabilities in lower East Tennessee. Students served by this school included learning disabled, emotionally handicapped, autistic, and multiply physically handicapped students ranging in age from four to seventeen.

Many students returning to regular classes from this special school seemed to encounter frequent negative behavior on the part of the regular classroom teacher. As a result, students to be returned to the regular school environment were trained in the use of behavior modifi-

cation for the purpose of reducing potential regular classroom teacher negative behavior toward the returning student.

Commencing approximately three months prior to the expected date of return to the regular classroom, students of this special school began training in the use of behavior modification techniques. Meeting for fifteen minutes daily, students about to be separated were taught the use of operant techniques and empathic responding communication modes. The students learned to influence the teachers' behavior toward the students in positive ways.

1979-1980

The training program was utilized in a small, East central Arkansas school under the auspices of a resource program. Many of the students placed in the resource program appeared to suffer as much from behavioral difficulties as academic difficulties. In addition to specific academic remediation, these students were also taught how to modify the behavior of their regular classroom teachers.

In twice-weekly class meetings, the resource students were trained to identify and reinforce positive teacher behavior directed toward the student. In addition, these students were taught to communicate to the teacher that the teacher's efforts had resulted in learning for the student.

Description of the Pilot Study

The training program as it has evolved was implemented as a pilot study at a private, Mid-Southern, all-male, college preparatory institution. This secondary school was also the one at which the present research was conducted.

As an independent school with emphasis on academic excellence and preparation for a college experience, the progress of each student is carefully and conscientiously reviewed by the administrative staff on a continuous basis. Students deemed by the administration to be falling behind in their studies, or exhibiting what are regarded as significant behavioral difficulties, receive prompt intervention.

Intervention has typically taken the form of enforced study for such a student. A student who has been judged by the Principal and the Administrative Assistant to be in imminent danger of failure due to poor academic or behavioral performance is referred to a Supervised Study Section. The student forfeits his daily free period and spends it instead in supervised study. When, in the opinion of the Principal and Administrative Assistant, the student has made sufficient progress, a return to the student's schedule of daily free periods is warranted.

Therefore, a student's grades or conduct marks are the basic criteria by which he both gains access to and egress from supervised study. His free periods are spent in enforced study until his free time is not judged to represent an obstacle to the fulfillment of his intellectual potential. When and if his grades and behavior improve significantly, he is allowed to enjoy a schedule which provides for free time once again.

There are seven daily academic periods at this school each day. The boys' schedules are such that a relatively equal number of students are free each period. This means that for each daily period, there was a corresponding supervised study session. Since groups were formed by necessities dictated by the daily schedule, this format was attempted on a pilot basis in a group format for the purpose of assisting in the remediation of the academic or behavioral problems presented by the students referred to supervised study.

The criteria by which students are recommended for and placed in supervised study are somewhat subjective and can vary somewhat from student to student. As a general rule, however, if a student has earned two or more failures in academic subject areas for a grading period, his placement in supervised study is automatic. A second criterion by which students may be placed is

poor classroom behavior. Two or more conduct marks indicating a need for improvement in behavior also constitutes automatic placement in supervised study.

It should be noted that students placed in supervised study for behavioral reasons are not necessarily academically limited. Several students who took part in the pilot program who were referred for behavioral reasons had been named National Merit Semifinalists. Nevertheless, poor behavior is unacceptable under any circumstances. Therefore, placement in supervised study occurs and the student loses his daily free period.

The population of students with which this study concerned itself were by no means necessarily academically limited. Some students presented primarily academic difficulties while others presented primarily behavioral difficulties. Still others presented a combination of both academic and behavioral problems. The composition of the groups was rather diverse in this respect, and were populated by students with apparently differing perspectives, values, attitudes and behaviors.

Results of the Pilot Program

Having access to seven previously arranged groups, the trainer randomly selected one supervised study group to serve as an experimental group to train as managers of a behavior modification program for the purpose of changing negative classroom teacher behavior. Each experimental

student selected or "targeted" one teacher with whom to work for the purpose of the treatment program. The targeted teacher was identified by the student as one with whom the student would be willing to work very hard in order to try to get the teacher to change some negative feelings the teacher had about the experimental student.

The control group was chosen in the following manner. The roster for each targeted teacher's class of which the experimental student was a member was reviewed by the Administrative Assistant. He was asked to examine each of the rosters, and indicate the top five or six high-risk students in each class. In each case, the experimental student was ranked at or near the top of the high-risk list. Students so identified but not chosen as experimental students served as control students.

Because of the fact that there were four or five control students for each experimental student, cell sizes were substantially unequal. As a result, a weighted means analysis of variance was performed on the data following treatment. The dependent measures included grades in the targeted teachers' classes, and scores the targeted teachers gave experimental and control students on the Inferred Self Concept Scale (McDaniel, 1973), modified for high school use.

The Inferred Self Concept Scale was designed for use by school personnel to rate self concept of students.

This instrument rates each of thirty behavioral descriptors on a one-to-five scale. Ratings are then summed across the items and a total score is obtained. Due to the subjects' age and the need to adapt the scale for age, no comparisons were made to norm groups. Based on total score possible, it appeared that both experimental and control group students fell within the average range on this measure.

Grades were used to measure academic achievement. Grades at the school range from 55 to 100. Numerical grades on all subjects were obtained prior to and following treatment, as were self concept scores.

Following the analysis of the data, a disordinal interaction effect for both grades ($p < .001$) and self concept ($p < .001$) was observed. Post-hoc examination of cell mean differences indicated that experimental group students were significantly lower on both dependent measures than the control group. Posttest cell mean differences indicated that experimental students had not significantly surpassed the control group for grades, but had made significant gains over the pretest level of performance on grades. On the self concept measure, experimental students entered treatment with significantly lower scores than the control group, and emerged from treatment with significantly higher scores than the control

group. As both measures indicated significant F-ratios, it appeared that the pilot program's hypotheses that grades and self concept could be enhanced by training in the use of behavior management techniques were supportable.

Design

The design utilized for this research was the pretest-posttest control group design. A preliminary analysis of the pretest data utilizing a oneway analysis of variance (ANOVA) was performed to determine if significant differences between means existed prior to treatment, and to establish homogeneity of variance. Dunn's post-hoc procedure was performed to determine the location of significant pair-wise cell mean differences.

Research Questions

The principle area of investigation of this study is perceived academic and behavioral changes in group members. The question to be considered is: To what extent does a student-managed program to modify teacher behavior affect teachers' evaluations of such students?

The following specific questions are raised:

1. To what extent can a student-managed behavior

modification training program change the teachers' academic evaluations of such students?

2. To what extent can a student-managed behavior modification training program change the teachers' behavioral evaluations of such students?

Hypotheses

The following are the hypotheses related to the research questions:

Ho_1: There will be no difference among experimental and control groups between pretest and posttest means on Grades in targeted teachers' classes.

Ho_2: There will be no difference among experimental and control groups between pretest and posttest means on the School Behavior Checklist in targeted teachers' classes.

Definition of Terms

For the purpose of this research, the following terms are defined:

Grades -- Grades assigned to the subjects are reported on a numerical continuum from 55 to 100. In this research, Grades were defined as the numerical value assigned to

subjects for coursework undertaken in targeted teachers' classes prior to and following treatment.

School Behavior -- This term was defined as the summed scores subjects received on the Total Disability Scale of the School Behavior Checklist (Miller, 1977), Form A2, filled out by targeted teachers prior to and following treatment.

Limitations

This study is necessarily limited by having been conducted in an all-male, college preparatory, private school located in the Mid-South. As a result, it may be difficult to extrapolate findings reported here to co-educational, public, or other institutions.

The training program utilized in this study was specific to itself and the trainer. Other counseling methods used in resolving problems students face in schools as a result of poor academic or behavioral performance may be as numerous as there are counseling practitioners in such settings. Many of the methods used by others may be as effective or more effective than the one described here.

Because of the selection procedures employed in this study, no grade level, socioeconomic status, racial or intellectual ability dichotomies were made in the analysis of the data. Utilizing such dichotomies could evolve

conclusions different from those reported in this study.

The measures which were utilized here were believed to be closely and appropriately related to the academic and behavioral criteria under experimental consideration. However, it is possible that other equally viable instrumentation exists which was not used.

Assumptions

The primary assumption of this study was that student modification of teacher behavior could create indirect, concomitant positive changes in the teachers' assessments of the students. It was further assumed that the teachers' academic and behavioral assessments of the students reflected the effect of the students' treatment.

Contributions of the Study

A contribution of this study will be that if teachers' affective judgments of students can be positively altered through the use of a student-managed behavior modification program, and if those changes in teacher attitude are reflected subsequently in more positive academic and behavioral evaluations of such students, an efficient method of dealing positively with a poor student-teacher relation-

ship will have been demonstrated. In accepting partial responsibility for the quality of the overall classroom experience by being able to positively influence what happens in the classroom, the student will be able to take a more proactive role in establishing and maintaining a positive classroom atmosphere.

A related contribution of this study will be that the teacher may no longer be expected to accept sole responsibility for the teacher-student relationship. If students can effect positive behavior changes in their teachers by using behavior management techniques with the teachers, the student may be legitimately expected to share responsibility for the overall quality of the teacher-student relationship.

Finally, this research will contribute to the body of knowledge concerning the viability of students as managers of adult behavior. It appears that students have been overlooked to a certain extent in the reported research as appropriate change agents for the purpose of changing adult behavior. It further appears that the research which has addressed this issue indicates that students are capable of acting effectively in such a role.

Chapter II

REVIEW OF THE LITERATURE AND RESEARCH

Chapter II reviews pertinent literature and published research relative to the efficacy of students' efforts as managers of behavior change programs. The need for research in student-managed behavior modification programming is discussed. Finally, the various roles in which students have successfully performed as primary change agents are detailed.

Need for Research on Student-Managed Behavior Modification Programming

A preliminary review of the published research in behavior modification seemed to reveal an apparent bias in terms of criteria utilized in the selection of an appropriate change agent (Benassi and Larson, 1974; Halfacre, 1974). This bias appeared to hold that the behavior change agent is properly chosen as long as he or she is older than the subject whose behavior is in the process of modification (Birkimer and Brown, 1979; Clement, 1973; Kratochvil, 1970).

Briskin and Anderson (1973) appeared to reflect such a bias in reporting the results of their study

training behaviorally troubled sixth grade students in the use of behavior management techniques for use with younger students. After a training period, the student behavior managers were paired with similarly problematic students exhibiting behavioral disorders in the third grade. The student behavior managers obtained significantly higher positive behavior changes across a wide array of variables than did an untrained control group composed of "peer tutors". These authors concluded in part,

> The subjects responded to procedures by boys trained in the technical aspects of contingency management who were only three years their senior. (Briskin and Anderson, 1973, p. 267)

The role played by the child in attempting to influence significant adult others seemed to be another issue which may have been largely overlooked in the published research. Few adults would choose to reject the notion that children do attempt to influence the outcome of decisions being made about them by adults. Yet, the child's contribution to such interaction through the use of influence seems not to have been closely scrutinized in the reported literature.

Baranowski (1978) reported that children attempted to influence adults much more often than was generally supposed by adults. His study demonstrated that children attempted to influence their parents significantly more

often than their parents perceived them to do so. He further hypothesized that this influencing behavior likely presented itself in areas other than just the family, especially the classroom. Baranowski added that teachers were probably even less likely than parents to accurately perceive the true frequency of student attempts to exert influence over the classroom teacher.

Children do appear to contribute materially to their behavioral environment through the use of covert influence on significant adult others performing in controlling roles. Children might be expected then to demonstrate effectiveness as behavioral managers in the classroom.

It appears that children can and do influence the course of decisions made about them by adults. It further appears that children could influence adults through the use of behavior modification techniques if the children undergo training in the use of such techniques. It may be helpful, however, to scrutinize more closely a concept which may have become obscured by the traditional value of absolute adult control of children. That concept is the role of behavioral reciprocity in the child-adult relationship.

Benassi and Larson (1974) believed that all relationships are maintained through reciprocity, including the parent-child relationship. These authors maintained that

the overall family relationship is composed of complex sets of behavioral inter-relationships between all of its members. This relationship is characterized by dyadic interaction in which behavioral homeostasis is achieved and maintained as a function of reciprocal reinforcement among the members of the family. That is to say, a family relates among its own members behaviorally in ways which are the most comfortable and productive for the family at any given moment.

Benassi and Larson believed that this apparent reciprocal behavioral phenomenon may be overlooked as a source of behavioral input for the family. It was stated that the practical role of the child as a legitimate and functional change agent in the family behavior system may have been largely ignored.

Benassi and Larson pointed out that any member of the family relationship, including the child, could move capably to create and maintain a more satisfactory behavioral environment. They stated,

> Any attempt to understand the interactions that occur in families must include the contributions of the child to the development and maintenance of those interactions. (p. 1)

These authors reported a review of the literature pertaining to children as change agents for themselves as well as peers in various institutions, including the

school. While these authors stopped short of proposing students outright as managers of teacher behavior, they concluded that

> ...both common sense and a substantial body of research indicate that parents and children control the behavior of one another. (p. 6)

The need for this study was to determine if the dynamics outlined by Benassi and Larson with respect to the family are equally applicable to the student-teacher relationship in the school environment. If they are, the need to examine the feasibility, value, and appropriateness of students as managers of teachers' classroom behavior appears evident.

Students as Change Agents

Students as Managers of Peer Behavior

The concept of using students as managers of peers with behavioral problems has received attention in the published literature (Drass and Jones, 1971; Greenwood, 1972; Nelson, Worrell and Polsgrove, 1973; Schultz and Lambert, 1972). Hypotheses that students could provide and maintain effective peer management of behaviorally disruptive students have been supported in the reported research (Carstens and Young, 1979; Matheny, Anderson and Blue, 1978; Rouse and Farb, 1974; Solomon,

1972; Toner, 1977).

Peer management for behavior problems has been recommended as an effective alternative to physical punishment in the schools. Toner (1977) reported that the process of having been chosen as a model for videotaping of appropriate behavior, in itself, seemed to have a positive effect on the problem behavior of third and fourth grade students. Additionally, these students' modeling had a positive impact on the behavior of experimental students selected to view the models' behavior.

It appears that results reported in some of the research on peer behavior management may have been contaminated by the effects of co-reinforcement procedures (Drass and Jones, 1971; Nelson, et al, 1973). In these studies, rewards for the peer trainers were contingent upon the behavioral gains demonstrated by their respective trainees.

Nonetheless, research in which co-reinforcement was not a functional component reported positive gains. Rouse and Farb (1974) successfully utilized senior high school students as behavior change agents in junior high classrooms. These peer trainers reportedly performed with sufficient consistency and efficiency as change agents to be rated as equivalent in performance to regular classroom teachers who were also trained in the use of

behavior management techniques.

Briskin and Anderson (1973) reported the results of their research in which sixth grade "problem" students served as contingency managers for problematic third graders. This group of experimental change agents posted significantly greater behavioral increases among their subjects than did their control group counterparts. In addition, this study reported the apparent emergence of a phenomenon which seems to occur among those who undergo training in the use of behavior modification systems: Concomitant positive behavioral increases were evidenced among the behavior managers, themselves.

The viability of the use of students as behavior change agents has been demonstrated in settings other than the schools. Carstens and Young (1979), working in a detention center, used fifteen to eighteen year old residents to significantly increase positive behavior among younger offenders.

Finally, Greenwood (1972) utilized classmates as small group contingency managers of a programmed math curriculum using verbal and non-verbal reinforcers. Four different experimental groups posted significantly greater posttest math scores than did the control groups, In each case, the experimental group was maintained by a different, newly trained manager.

Students as Managers of Their Own Behavior

Clement (1973) reasoned that, "Each person can control his own behavior by the very means he uses to influence the behavior of others." (p. 615). In subsequently recommending the use of the student as a potentially effective change agent for his or her own behavior, Clement noted the lack of established procedures by which such a goal might be realized,

> Probably most systems of child psychotherapy would hold as an ultimate goal that the child should assume responsibility for his own therapy. However the traditional systems have not provided much specific structure for training the child to be responsible for his own therapy. (p. 620)

Kratochvil made a similar recommendation with respect to students directing and maintaining their own behavior change,

> One major concern of many counselors is to assist students in directing changes in their own lives, since they believe student-directed change is a desirable aim of counseling. (p. 376)

Such a system may be available since students have demonstrated efficiency in terms of managing programs to positively change and maintain their own behavior through the use of behavior modification techniques (Andrews and Williams, 1970; Birkimer and Brown, 1979; Chandler and Dinero, 1977; Groveman, 1975; Jones, 1968; Sanders, 1978). The rationale for the use of students as self-

change agents has received attention in the literature (Benassi and Larson, 1974; Clement, 1973; Davis, 1979; Drabman, Spitalnik and O'Leary, 1973; Duncan, 1969; Kratochvil, 1970; Watson and Hall, 1977).

The published research seems to indicate that students can maintain appropriate behavioral self changes with or without teacher assistance (Birkimer and Brown, 1979). Duncan (1969) reported the results of his research in which teachers independently baselined student behavior. The students, however, planned, implemented and maintained significantly greater positive behavior changes than a control group which utilized a teacher-managed program of behavior change.

Drabman, Spitalnik and O'Leary (1973) reported that students were able to successfully program and manage their own behavior after receiving bonus rewards for matching teacher evaluations of student target behavior frequencies. The students were reportedly able to maintain the program on their own, and were subsequently able to identify and modify new target behaviors without teacher assistance.

Birkimer and Brown (1979) reported that student self-ratings were as effective in student behavior control as a teacher-administered point system. Davis (1979) reported the results of his research in which students acted as their own behavior models in a videotaping

model program. Observing themselves as models, experimental students displayed and maintained significantly greater positive behavior changes than a teacher-managed behavior modification control group.

Finally, Watson and Hall (1977) reported that early adolescent hyperactive students successfully decreased their own hyperactive behavior and increased on-task behavior in academic seatwork through the combined use of behavior modification training and biofeedback techniques. These authors reported significantly greater positive increases in on-task behavior frequency among the experimental group than the control group trained in biofeedback techniques alone.

Students as Managers of Teacher Behavior

Students have been proposed as appropriate subjects for training in programs of behavior management for the purpose of changing classroom teacher behavior (Edwards, 1973; Hutton, 1973; Tacke and Hofer, 1979; Thomas, 1969). Empirical research based on this proposal has been undertaken (Feldman and Prohaska, 1979; Gray, Graubard and Rosenberg, 1974; Halfacre, 1974; Klein, 1970; Novak, 1972).

Halfacre (1974) confirmed his hypothesis that students applying behavior modification principles can significantly increase positive teacher classroom behavior. He further

found that such training seemed to create in his student experimenters concomitant changes in their own undesirable classroom behavior.

Halfacre asked both experimental students and their teachers to rate one another on the frequency of selected problem behaviors in the classroom. The students alone were trained in the use of behavior modification techniques. As a result of this training, experimental students were able to positively increase class discussion behavior on the part of their targeted teachers. At the same time, following intervention, targeted teachers reported significant positive behavior changes in the experimental group over students in an untreated control group.

Halfacre's rationale for training students in the use of behavior management techniques with teachers lies in his reports of difficulties cited in the literature in getting teachers to generalize behavioral methods to other problem behavior situations. This difficulty has been noted by others (Almase, 1973; Altman and Linton, 1971; Borg, 1972; Dawson, 1975; Good and Brophy, 1974; Gray, Graubard and Rosenberg, 1974; Kotcher and Doremus, 1972; Powell, 1978; Silverman and Kimmel, 1972; Wagner, 1973).

Halfacre states,

> Since research supports the utility of behavioral techniques when applied by knowledgeable and cooperative individuals and since there is frequent teacher reluctance in the use of these procedures, the question

> is raised as to the efficacy of teaching principles of behavior modification to students. (p. 2)

Halfacre concluded from his own research that,

> Emphasis in behavioral techniques in the classroom now appears to be, not upon the validity of the techniques, but upon the effectiveness (by) which they can be communicated to groups of typical classroom teachers. (p. 5)

Novak (1972) concluded from his research that students were capable of giving appropriate feedback responses to positive teacher behaviors, and further, that such feedback provided significant increases in positive teacher behavior toward students. Klein (1970) affirmed two hypotheses which seemed to support Novak's findings. Klein discovered that there were significant positive changes in teacher behavior in the presence of positive student behavior. In addition, if the student manifested positive behavior, the teacher was likely to do so also.

Feldman and Prohaska (1979) confirmed that a student's expectation concerning a teacher's behavior could be transmitted accurately to the teacher by the student. In turn, it was ascertained that under such circumstances teacher behavior tended to become congruent with student expectation.

Gray, Graubard and Rosenberg (1974) reported the results of their research in which underachieving,

behaviorally maladjusted students were taught to systematically modify teacher behavior. These students were taught to praise teachers for engaging in behaviors the students had selected as appropriate, and to communicate to the teachers when the student was disturbed by something the teacher had done or said.

The criterion behaviors whose frequencies were baselined in this study included measures of teacher approval such as nodding, smiling, visual attention and physical contact. Post intervention teacher behavior frequencies of positive attention were significantly greater than those reported during the baseline period for all subjects. This research dealt primarily with the subjects' responses to the effectiveness of the intervention plan and did not consider the indirect effects of the student intervention on the teachers. In addition, the data generated from the study were based on student frequency counts and were not subjected to inter-rater reliability checks.

Summary

The published research in student-managed behavior modification programming seemed to indicate that the use of behavior modification has enjoyed a sustained relation-

ship with helping professionals characterized by feasibility, usefulness and positive results (Edwards, 1973; Feldman and Prohaska, 1979; Gray, Graubard and Rosenberg, 1974; Halfacre, 1974). Further, behavior modification techniques have proven themselves to be effective with and amenable to students serving in the role of primary change agent (Hutton, 1973; Klein, 1970; Tacke and Hofer, 1979; Thomas, 1969).

Having demonstrated skill in commanding the logic and the machinery of behavior management techniques, students appear nonetheless to have been infrequently called upon to perform in the role of change agent for adult behavior (Benassi and Larson, 1974). Given the opportunity to do so however, students have demonstrated effectiveness in performing in such a role (Gray, Graubard and Rosenberg, 1974; Halfacre, 1974).

The rationale for the use of students as behavior change agents seems evident from reported results of research efforts in this area. The teacher may not be the best choice as the person in the classroom to take effective steps to establish a more positive classroom atmosphere using behavior modification systems (Nelson, 1969). Students, as members of the student-teacher relationship, are probably equally equipped to create and maintain such a positive learning environment (Halfacre, 1974).

It appears that students can effectively increase positive teacher behavior in the classroom. An increase in positive teacher behavior may nurture more positive behavior from the student toward the teacher. It may be that the teacher should not be regarded as solely responsible for the overall quality of the classroom experience. The student appears to possess the capacity to create and maintain a more mutually positive atmosphere through the training in and use of behavior modification techniques on the teacher.

Chapter III

SAMPLE, TREATMENT, DESIGN, INSTRUMENTS, AND PROCEDURES

Chapter III describes the population and how the sample for the study was selected. It provides an overview of the training program for students managing teacher classroom behavior. The qualifications of the trainer are listed. The design for the study is detailed. Data collection procedures are described along with the instrumentation used in the collection of the data. Research questions and their associated hypotheses are given. Finally, the analysis of the data is outlined, and a description of Dunn's Post-Hoc follow-up procedure is given.

Sample

This research was conducted at an all-male, college preparatory institution located in the Mid-South area serving young men in grades 7-12. The population of the school has stabilized over the last three years at approximately 520 students. Fifty-three full-time teachers and administrative staff members represent a full staff for this number of students.

The mean IQ for students at this school is 126.7, with a range from 111 to 165+. Students' ages range from 12 to 18. Socioeconomic status of the student body, with some exceptions, is upper-middle class. For the purposes of this research, the population was limited to students enrolled in the Upper School. This included grades 9-12, comprising a total population of approximately 400 students.

Although entrance to the school is approached on a case-by-case basis by the Admissions Committee, a successful candidate for admission is generally expected to have maintained a "B" average at his prior school. In addition, he should perform at the upper twentieth percentile on the school's admission test. Finally, a successful candidate is expected to score at least one standard deviation above the mean on the Otis-Lennon Mental Abilities Test.

In academic year 1979-1980 the school completed its twenty-fifth consecutive year of operation at the current site. The philosophy of the school with respect to preferred student outcomes, and the methods and objectives by which those outcomes may best be realized, appear to be shared equally between the teaching and administrative staffs. As such, these methods and objectives seem uniformly adhered to in the classroom. In addition, this philosophy seems clearly reflected in administrative decisions concerning student policy with respect to student conduct, academic performance, and achievement criteria.

The overall philosophy of the school emphasizes rigorous preparation and academic excellence. Little deviation from these expectations is tolerated. Students who do seem to depart significantly from the norms of personal and academic excellence receive prompt attention from teachers and school officials. It was this group of students, those who appeared indifferent to the school's stated values of personal and academic excellence, who comprised the population from which this research extracted its subjects.

Students subjectively judged to be failing to conform to school standards are placed in supervised study sessions by the Administrative Assistant and the Upper School Principal. Placement in supervised study means that the student has lost his daily free period. Instead, the student is required to report to a proctored classroom. Here, absolute silence is enforced, and the student is expected to devote his full attention to academic preparation. This particular group of students who seemed to present significant academic or behavioral problems were chosen as potential subjects because they were deemed most in need of intervention.

The teaching staff appears to scrutinize the progress of supervised study students closely since the faculty tends to believe that placement indicates a high-risk status for

supervised study students. It appears that if a teacher has a question concerning the ability of a particular student to matriculate successfully through the school program, and the student is placed in supervised study, the teacher may believe that the failure of the student is imminent.

Selection

There are seven class periods per day at the school. For each class period there is a corresponding supervised study session since the student are free to schedule their free periods to best fit their own needs. It was from among this universe of seven supervised study session groups that the experimental and control groups were randomly chosen. The total number of students placed in supervised study at the time of selection was sixty-seven.

Selection, then, was based on a student's already having been placed in a supervised study session. Two study session groups were randomle selected as experimental groups, and two were randomly selected as control groups. There were sixteen students in the experimental group, and sixteen students in the control group. The experimental group was trained in the use of behavior modification techniques for the purpose of indirectly modifying teachers academic and behavioral assessments of students modifying teachers' classroom behavior.

Using a table of random numbers, both experimental and control group subjects were selected from among available supervised study groups. While the experimental group was undergoing training in the modification of a specific teacher's behavior, the control group also selected teachers whose opinions of the control group students they would like to have changed. The control group received non-specific counseling. Control group subjects were able to state their complaints, and were encouraged to plan and implement ways to get out of supervised study. The counselor listened to control group subjects but did not make substantial helping inputs. The control group also met for twelve sessions, meeting twice weekly for a six week period.

Other than demographic limitations imposed by the composition of the student body, and the fact that only Upper School students were available for sampling purposes, no dichotomies other than trained and non-trained supervised study students were examined. This dichotomy was deemed appropriate since it appears that a supervised study student's subjective view of his ability, as well as the probability of his successful matriculation, are often negatively impacted by placement in supervised study.

Treatment

The following is a brief, session-by-session de-

scription of the training format utilized in this research.

Session 1

The first session was devoted to presenting an overview of the program to the experimental students. After the students made a commitment to attempt the project, the objectives of the procedure and a description of the methods used in attaining the objectives were described. After answering questions, the students were given a homework assignment. This assignment involved asking the students to closely observe the classroom behavior of their teachers. Specifically, the students were asked to begin to be able to identify causes of teacher classroom behavior.

Session 2

Students were asked to share their findings with respect to the homework assignment. They were asked to begin to appreciate the fact that much teacher classroom behavior arises from human needs of the teacher, not necessarily needs which are exclusive to the role of "teacher".

Students were introduced to some basic terminology involved in the use of behavior modification. The importance of non-verbal communication and feedback were presented to the students. Students were asked to critically analyze their own non-verbal communication styles. This discussion was processed by the trainer. Students were informed that similar discussions subsequent to Session 5

would be processed by the students in the group.

The concept of "group-as-behavioral-laboratory" was introduced. The students were encouraged to experiment with their own behavior within the group environment. A role-playing homework assignment was given. The assignment asked the students to turn in a written critique of the student, through the eyes of a teacher chosen in advance. That is, what was the student's view of a particular teacher's perception of the student?

Session 3

Group members discussed the results of the homework assignment. Group members were pressed to interpret possible reasons for teacher perceptions of students being viewed as negative by many of the experimental students. The role of negative behavior and the impact of that behavior on the teacher was discussed from the perspective of operant conditioning.

During this session, students were asked to identify, or "target", one specific teacher with whom the student would be willing to work during the course of the training procedure. Behavior baselining was then discussed and demonstrated. Students were asked to agree as a group on one specific teacher behavior which the students believed was representative of positive teacher attention for the purpose of frequency counts. Students were asked to baseline this behavior for five consecutive class days,

and to report daily behavioral frequencies to the trainer following the targeted teacher's class each day. The behavior chosen was smiling from the teacher.

Session 4

Separate behavior frequency charts were prepared and maintained for each experimental student by the trainer. Although there was no research importance associated with the use of these charts, it was important for the students to have concrete feedback concerning the efficacy of their efforts during the course of the training program. The daily charts were used to fulfill this need.

Group members were given a homework assignment which was to last for the duration of the training program. Each student was required to prepare at least one question nightly for use in his targeted teacher's class the following day. The question was to clearly reflect time spent in preparation for the class, and was to be comprehensive in nature. As a check, the students were asked to bring the questions to the trainer each day prior to class in order to verify the content and quality of the question.

Session 5

This session was videotaped at the school library. The purpose of this session was to check for the quality of student non-verbal attention-giving behavior, to examine the ability of the student to provide the teacher with positive feedback, and to learn to identify positive teacher behavior

when it was transmitted by the teacher to the student.

The session was begun on tape by discussing the baseline behavior frequency counts of positive teacher behavior which had been completed by this time in the program. Actual in-class intervention had begun, and students discussed the impact of their intervention to date. The trainer served as the teacher for the videotaping purposes.

The videotape was then reviewed and processed by the group members first, and the trainer followed up with additional observations and comments. In particular, positive attention of the students toward the trainer as teacher was reviewed. The physical, videotaped evidence of the quality of student attention- and approval-giving behavior was assessed. Students were urged to practice such behavior in order to produce reactions toward the teacher which were consistent with student feeling.

Session 6

The group assessed its overall progress in the program and shared instances of positive teacher feedback with other group members. The group was responsible for the entirety of this discussion. Questions raised by the trainer were designed to clarify program goals and objectives.

Student reinforcers had consisted primarily of smiling, nodding, visual attention, and the daily class question. A new reinforcer was introduced into the training format.

This additional reinforcer was designated the "I understand" statement.

The "I understand" statement was designed to communicate to the teacher that a specific learning had taken place for the student, that the student was aware of it, and that the student identified the learning as a product of the teacher's teaching effort. When the student was sure that he fully understood a concept that the teacher was presenting to the class, the student was taught to respond, "I understand what you're saying now. What you mean is...". The student was then to go on to detail the essence of the teacher's concept back to the teacher in the student's own words.

Session 7

This session was devoted to a follow-up discussion of earlier group discussions concerning teacher classroom behavior. The trainer reminded the students that the negative behavior toward the students was formerly assessed by the student as a simple, straightforward, "I hate him. He hates me." Now students were saying, "Boy, he must be feeling lousy about himself today to have talked to me that way." Finally, based on accumulated frequency chart information, the significance of the steady rise in positive teacher behavior from the targeted teachers toward the experimental students was reviewed and processed.

Session 8

The primary component of this session was a role-playing exercise. Each student was asked to take the role of his targeted teacher. Acting as the teacher, the student was asked to assess the progress he, as student, had made to date. In addition, at the end of the session, each group member was asked to make specific comments concerning each other group member's efforts in terms of increasing the quality of their attention- and approval-giving behaviors during the group sessions.

Session 9

An additional reinforcer was introduced during this session: the "I understand because" statement. The purpose of this reinforcer was not only to communicate to the teacher that a discrete learning had taken place for the experimental student, but also that the student identified the learning as a function of the teacher's effort. "Now I see what you're saying. The way you explained that this time, I see you're saying...".

The student was asked to detail carefully and precisely what had been learned. The intent was to clearly communicate to the teacher that the teacher's effort had facilitated the learning for the student. Examples were given, and students practiced delivering the "I understand because" statement.

Session 10

This session was devoted to additional practice in delivering the "I understand because" statement with the aid of the videotape recorder. As the students viewed the playback, they processed not only the quality of the delivery of the statements, but also attention- and approval-giving behaviors among other group members as well. Students were urged by the trainer to closely examine their motives for delivering an "I understand because" statement prior to using it. They were cautioned that indiscriminate usage of this kind of reinforcer may cause irreparable harm to their attempts to develop a more positive relationship between themselves and their targeted teachers.

Session 11

Students were asked to share any anecdotal comments which may have been made by their targeted teachers during the course of the treatment program. The group members were asked to make and own feeling statements concerning their reactions toward having been perceived in a more positive light by their targeted teachers.

Session 12

The final session was devoted to an evaluation of the project. Group members were asked to consider and process their answers to such questions as: "What did we do? How did we do it? Did it work? How? Why? What might we

do differently next time? How do we feel about what went on here? How do you think this might work with other kinds of people or kids in other kinds of schools?"

Qualifications of the Trainer

The trainer in this research project is a Doctoral candidate in the Department of Counseling and Personnel Services at Memphis State University, Memphis, Tennessee. He has taught special education for eight years, working with a variety of students with special learning characteristics in Ohio, Tennessee and Arkansas.

The trainer has run parent, adolescent and child groups in the course of his teaching. He has served as trainer relative to the present project for eight years. Student groups whose training in behavior management techniques he has supervised ranged in composition from autistic to gifted students. These groups have been trained over a span of eleven years, with the first such student training group having been conducted in 1970. The trainer's doctoral course work has included introductory and advanced work in Theories, Groups and Practica.

Design

The design utilized for this research was the pretest-

posttest control group design (Campbell and Stanley, 1963). It appeared to be particularly appropriate since this design has the capacity to control for known sources of internal invalidity: History, maturation, testing, instrumentation, regression, selection and mortality, as well as interaction effects among these sources (p. 8).

There were four cells involved in this research across each dependent measure -- one each on the pretest across experimental and control groups, and one each on the posttest across experimental and control groups. The dependent measures included teachers' grades and teacher perceptions of student behavior.

The pretest grade data were obtained from official school records after each student had targeted a teacher. The grade data consisted of the students' grades in targeted teachers' classes at the end of the first quarter of the 1980-1981 school year. The pretest behavior data were obtained from targeted teachers' responses on the School Behavior Checklist (SBC) (Miller, 1977) for each student at the beginning of the treatment program.

Posttest data on grades were gathered as soon as grade information was officially posted following the end of the second academic quarter. Posttest SBC's were filled out by targeted teachers immediately following the conclusion of the treatment program.

Research Questions

The principle area of investigation of this study is perceived academic and behavioral changes in group members. The question to be considered is: To what extent does a student-managed program to modify teacher classroom behavior affect teachers' evaluations of such students?

The following specific questions are raised:

1. To what extent can a student-managed behavior modification program change the teachers' academic evaluations of such students?
2. To what extent can a student-managed behavior modification program change the teachers' behavioral evaluations of such students?

Hypotheses

The following are the hypotheses related to the research questions:

Ho_1: There will be no difference among experimental and control groups between pretest and posttest means on Grades in targeted teachers' classes.

Ho_2: There will be no difference among experimental and control groups between pretest and posttest means on the School Behavior Checklist in

targeted teachers' classes.

Definition of Terms

For the purpose of this research, the following terms were defined:

Grades -- Grades assigned to the subjects are reported on a continuum from 55 to 100. In this research, Grades were defined as the numerical value assigned to subjects for coursework undertaken in targeted teachers' classes, prior to and following intervention.

Behavior -- This term was defined as the summed scores subjects received on the Total Disability Scale of the School Behavior Checklist (SBC), Form A2 (Miller, 1977), filled out by targeted teachers prior to and following intervention.

Instrumentation

The School Behavior Checklist (Miller, 1977) is a behavioral inventory designed to aid teachers in reporting behavioral impressions of their students to counselors and other mental health professionals. The inventory includes a wide variety of social and emotional behaviors, from social competence to moderate social deviance. Extreme

deviant disorders are not included in the inventory.

Form A2 is composed of 96 true-false items relevant to prosocial and deviant behaviors. The 96 items yield the Total Disability Scale of the instrument. Spearman-Brown and test-retest reliability coefficient information are located in Appendix A.

Analysis of the Data

The analysis of the data was a 2X2, mixed effects, repeated measures analysis of variance (ANOVA), performed utilizing the P-Series, Biomedical Programs (BMDP) format (Dixon and Brown, 1979). This analysis has been identified as being particularly compatible with the design utilized in this research (Huck, Cormier and Bounds, 1974).

The repeated measures were represented by Grades and SBC ratings on a pretest-posttest basis. Post-hoc analyses of cell mean differences were performed.

The rationale for an inspection of cell mean differences on a post-hoc basis lies in the assertion made by Kennedy (1978) that little substantive information can be gathered from a significant overall F-ratio. Obtaining a significant interaction F-ratio indicates only that there is at least one pair of cell means whose difference exceeds a difference which might be expected by chance (p. 162).

Kennedy recommends that follow-up procedures be undertaken on a post-hoc basis to determine precisely which pair-wise cell mean differences achieved significance. Among the procedures recommended by Kennedy is Dunn's multiple comparison procedure (p. 194).

Dunn's Follow-Up Procedure

Dunn's follow-up procedure (Dunn and Clark, 1974) is an appropriate inferential vehicle when used in the format of the confidence interval estimate (p. 38). The confidence interval estimate analysis is able to ascertain whether differences between means are positive or negative, provides a test of the null hypothesis $\mu_1 - \mu_2 = 0$, and yields information concerning the probable magnitude of the differences between means (Dunn, 1977; p. 94).

Dunn's procedure allows the data to be analyzed in such a way that observed differences between cell means may be tested for significance in order to determine the location of the interaction indicated by a significant overall F-ratio. The inspection of cell means may be done on a pair-wise or multiple comparison basis. The procedure provides for observed and hypothesized cell means to be contrasted with reference to confidence interval estimates associated with the chosen alpha rate. The pro-

cedure is essentially a series of t-tests corrected for the inflated alpha rate normally associated with repeated t-testing over the same data.

Dunn's contrast is constructed in such a way that an observed sample difference between cell means ($\hat{\Psi}_i$) is regarded as an estimate of the difference to be found in the population parameter, and is implicitly hypothesized as having some other value (Ψ_i) within that parameter. Such an hypothesis generally takes the form Ψ_i: $\mu_1-\mu_2=0$. In this form, it is hypothesized that the parameter value of the cell mean difference under consideration is zero. If the resulting confidence interval estimate captures the hypothesized value of zero, the hypothesis that the population difference might in fact be zero may not be rejected.

If the hypothesized value of zero is not captured within the bounds of the confidence interval estimate, it is appropriate to reject the hypothesis on the basis that the observed difference in cell means is significantly greater than one which might be expected by chance. The confidence by which such a statement can be made is an expression of a percentage corresponding to the value of $1-\alpha$. If the alpha rate is selected at .05, then such a statement can be made with 1-.05, or 95% confidence.

The general statement for a confidence interval estimate based on Dunn's procedure is as follows:

$$P(\hat{\Psi}-t_{Dunn}\sqrt{\Sigma c_i{}^2/n\ \underline{MSe}} \leq \Psi \leq \hat{\Psi}+t_{Dunn}\sqrt{\Sigma c_i{}^2/n\ \underline{MSe}}) = 1 - \alpha$$

where;

$\hat{\Psi}$ = the observed difference between cell means,

t_{Dunn} = the critical value of Dunn's "t",

$\Sigma c_i{}^2/n$ = the sum of contrasted cell coefficients squared, divided by the number of subjects per cell,

$\underline{MSe}$ = the mean square error term for the interaction of interest, and,

Ψ = the hypothesized value of the cell mean difference.

The primary advantage of Dunn's procedure, aside from its ability to locate specific cell means whose differences are significant, lies in its ability to convey more information to the researcher than rejecting or failing to reject the omnibus null. If the hypothesized value of cell mean differences is not captured within the bounds of the confidence interval estimate, not only is the "no difference" null rejected, but a range of values along which the sample difference could be expected to fall with repeated sampling in the general population 95% of the time is also established.

Chapter IV

RESULTS AND DISCUSSION

Chapter IV presents the statistical results of the study. Results of the pretest analyses of variance (ANOVA) and tests for homogeneity of variance for each dependent measure are given. For each variable, the hypothesis is presented, the repeated measures ANOVA and post-hoc follow-up results are presented, and the decision with respect to each hypothesis is given in view of the results of the follow-up procedure.

Preliminary Analysis

The purpose of the preliminary analyses was to provide information concerning the probablility of significant differences in means between groups at the pretest level, and to test for homogeneity of variance between groups prior to treatment. A oneway analysis of variance (ANOVA) was performed on the pretest data for each dependent measure.

Grades

The ANOVA summary and test results for homogeneity of variance for Grades is reported in Table 1. The between-groups *F*- ratio for Grades at the pretest level was computed

Table 1

ANOVA Summary and Homogeneity
of Variance Test for Grades, Pretest

Source	df	SS	MS	F	Prob.	Bartlett-Box F
Between	1	3.781	3.781	.5274	.820	.079
Within	1	2150.938	71.698			
Total	30	2154.719				

to be .5274. The probability of the significance of this ratio was set at .82. These results established that the difference between groups with respect to Grades was not significant at the pretest level.

It can be ascertained that, prior to treatment, experimental and control group means were equivalent with respect to Grades. The Bartlett-Box F Test for homogeneity of variance yielded a value of .079 which, although marginal, was still considered non-significant. As a result of these findings, pretest variance for Grades was judged to be homogeneous.

School Behavior

The ANOVA summary and test results for homogeneity of variance for perceived School Behavior are reported in Table 2. The between-groups F-ratio for School Behavior at the pretest level was computed to be 2.562. The proba-

Table 2

ANOVA Summary and Homogeneity
of Variance Test for School Behavior, Pretest

Source	df	SS	MS	F	Prob.	Bartlett-Box F
Between	1	220.500	220.500	2.562	.120	.555
Within	1	2581.500	86.050			
Total	30	2802.000				

bility of the significance of this ratio was set at .120. These results established that the difference between groups with respect to School Behavior was not significant at the pretest level.

It can be ascertained that, prior to treatment, experimental and control group means were equivalent with respect to School Behavior. The Bartlett-Box F Test for homogeneity of variance yielded a value of .555 which was not considered significant. As a result of these findings, pretest variance for School Behavior was judged to be homogeneous.

Posttest Analyses

A repeated measures ANOVA was performed on both dependent measures, Grades and School Behavior. Following

this analysis, Dunn's post-hoc follow-up procedure was performed on the data to locate the cell means whose differences achieved significance. The hypothesis associated with each measure is restated, and the results of the respective ANOVAs and post-hoc procedures are reported and discussed.

Grades

The hypothesis associated with the variable Grades stated that there would be no difference in Grades between students in the experimental group and those in the control group in targeted teachers' classes following intervention. The repeated measures ANOVA summary for Grades is reported in Table 3. A significant interaction F-ratio was obtained

Table 3

Repeated Measures ANOVA Summary, Grades

Source	SS	df	MS	F
Groups (G)	102.508	1	102.508	.80053
Error	3841.478	30	128.049	
Tests (T)	276.391	1	276.391	9.765*
(G) X (T)	260.015	1	260.015	9.187*
Error	849.092	30	28.303	

*p < .01

between pretest-posttest condition and group type ($p < .01$), which demonstrated that there was at least one pair of

cell means whose difference achieved significance. The precise cell mean difference which attained significance was not immediately apparent from the ANOVA results.

The table of cell mean differences for the variable Grades is presented in Table 4. A visual inspection of

Table 4

Observed Cell Means, Grades

	Pretest	Posttest	$\hat{\Psi}_i$
Experimental	61.94 (μ_{11})	70.25 (μ_{21})	8.31
Control	63.44 (μ_{12})	63.56 (μ_{22})	0.12
$\hat{\Psi}_i$	1.50	6.69	

cell means seems to indicate potentially significant differences between cells μ_{11} and μ_{21}, μ_{11} and μ_{12}, and μ_{21} and μ_{22}.

Dunn's post-hoc follow-up procedure was performed on a pair-wise basis in order to locate the precise cell mean differences which attained significance. The results of this analysis are reported in Table 5.

In Table 5, Ψ_1 hypothesized that the difference in means for Grades for the experimental group from pretest to posttest was zero, regardless of the observed difference of

Table 5

Dunn's Post-Hoc Contrast Procedure,
Grades

Contrast	$\hat{\Psi}_i$	95% Confidence Interval Estimate
Ψ_1: $\mu_{11}-\mu_{21}=0$	8.31	$P(3.664 \leq 0 \leq 12.956) = 1-\alpha$ Reject Ψ_1
Ψ_2: $\mu_{11}-\mu_{12}=0$	1.50	$P(-6.221 \leq 0 \leq 9.221) = 1-\alpha$ Fail to reject Ψ_2
Ψ_3: $\mu_{21}-\mu_{22}=0$	6.69	$P(-1.031 \leq 0 \leq 14.411) = 1-\alpha$ Fail to reject Ψ_3

8.31 points. The confidence interval estimate for this hypothesis established that a difference in means from 3.664 to 12.956 points could be expected 95% of the time. Since zero was not a value which could be reasonably expected, the null hypothesis $\mu_{11}-\mu_{21}=0$ was rejected.

The second contrast (Ψ_2) hypothesized that the difference in means between the experimental group and the control group for Grades at the pretest level was zero, regardless of the observed sample difference of 1.50 points. The confidence interval estimate for this hypothesis established that a difference in means from -6.221 to +9.221 points could be expected 95% of the time. Since the hypothesized value of zero was captured within the bounds of the confi-

dence interval estimate, an observed sample difference of zero could be expected to occur with repeated sampling. For this reason, the hypothesis that the difference in means between these cells might be zero could not be rejected.

The third contrast in Table 5 (Ψ_3) hypothesized that the difference in means between the experimental and control groups for Grades at the posttest level was zero, regardless of the sample difference of 6.69 points. The confidence interval estimate for this hypothesis established that a difference in means from -1.031 to +14.411 points could be expected 95% of the time. Since the hypothesized value of zero was captured within the bounds of the confidence interval estimate, an observed sample difference of zero could be expected to occur with repeated sampling. For this reason, the hypothesis that the difference in means between these cells might be zero could not be rejected.

It appears that the significant interaction effect indicated by the repeated measures ANOVA for Grades can be attributed to the performance of the experimental group as a result of intervention. The first contrast (Ψ_1), the only contrast failing to yield the hypothesized mean value of zero, indicated that the cell means whose difference achieved significance were those of the experimental group from pretest to posttest, and further, that the difference

was positive in nature. On this basis, the omnibus null that there would be no difference in Grades between groups following intervention was rejected.

School Behavior

The hypothesis associated with the variable School Behavior stated that there would be no difference in teachers' behavioral ratings on the School Behavior Checklist between students in the experimental group and those in the control group in targeted teachers' classes following intervention. The repeated measures ANOVA summary for School Behavior is reported in Table 6. A significant

Table 6

Repeated Measures ANOVA Summary, School Behavior

Source	SS	df	MS	F
Groups (G)	483.992	1	483.992	.981
Error	14806.406	30	493.547	
Tests (T)	333.062	1	333.062	39.079**
(G) X (T)	600.248	1	600.248	70.428**
Error	255.687	30	8.523	

**p < .001

interaction F-ratio was obtained between pretest-posttest condition and group type ($p < .001$), which demonstrated that there was at least one pair of cell means whose difference achieved significance. The precise cell mean

difference which attained significance was not immediately apparent from the ANOVA results.

The table of cell mean differences for the variable School Behavior is presented in Table 7. A visual in-

Table 7

Observed Cell Means, School Behavior

	Pretest	Posttest	$\hat{\Psi}_i$
Experimental	37.00 (μ_{11})	29.00 (μ_{21})	8.00
Control	25.56 (μ_{12})	24.94 (μ_{22})	0.62
$\hat{\Psi}_i$	11.44	4.06	

spection of cell means seems to indicate potentially significant differences in means between cells μ_{11} and μ_{21}, μ_{11} and μ_{12}, and μ_{21} and μ_{22}.

Dunn's post-hoc follow-up procedure was performed on a pair-wise basis in order to locate the precise cell mean differences which attained significance. The results of this analysis are reported in Table 8.

In Table 8, Ψ_1 hypothesized that the difference in means for School Behavior for the experimental group from pretest to posttest was zero, regardless of the observed difference of 8.00 points. The confidence interval estimate established that a difference in means from 5.45 to

Table 8

Dunn's Post-Hoc Contrast Procedure,
School Behavior

Contrast		95% Confidence Interval Estimate
Ψ_1: $\mu_{11}-\mu_{21}=0$	8.00	$P(5.45 \leq 0 \leq 10.55) = 1-\alpha$ Reject Ψ_1
Ψ_2: $\mu_{11}-\mu_{12}=0$	11.44	$P(-2.396 \leq 0 \leq 25.28) = 1-\alpha$ Fail to reject Ψ_2
Ψ_3: $\mu_{21}-\mu_{22}=0$	4.06	$P(-9.776 \leq 0 \leq 17.896) = 1-\alpha$ Fail to reject Ψ_3

10.55 points could be expected 95% of the time. Since zero was not a value which could be reasonably expected, the null hypothesis $\mu_{11}-\mu_{21}=0$ was rejected.

The second contrast (Ψ_2) hypothesized that the difference in means between the experimental group and the control group for School Behavior at the pretest level was zero, regardless of the observed difference of 11.44 points. The confidence interval estimate established that a difference in means from -2.396 to +25.28 points could be expected 95% of the time. Since the hypothesized value of zero was captured within the bounds of the confidence interval estimate, an observed sample difference of zero could be expected to occur with repeated sampling. For this reason,

the hypothesis that the difference in means between these groups might be zero could not be rejected.

The third contrast in Table 8 (Ψ_3) hypothesized that the difference in means between experimental and control groups for School Behavior at the posttest level was zero, regardless of the observed difference of 4.06 points. The confidence interval estimate for this hypothesis established that a difference in means from -9.776 70 +17.896 points could be expected 95% of the time. Since the hypothesized value of zero was captured within the bounds of the confidence interval estimate, an observed sample difference of zero could be expected to occur with repeated sampling. For this reason, the hypothesis that the difference in means between these groups might be zero could not be rejected.

It appears that the significant interaction effect indicated by the repeated measures ANOVA for School Behavior can be attributed to the performance of the experimental group as a result of intervention. The first contrast (Ψ_1), the only contrast failing to yield the hypothesized value of zero, indicated that the cell means whose difference achieved significance were those of the experimental group from pretest to posttest, and further, that the difference was positive in nature. On this basis, the omnibus null that there would be no difference in School Behavior between groups following intervention was rejected.

Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Chapter V presents a summary of the study. Research and substantive conclusions based on the results of the study are given. Recommendations for future research and for implementation of the training program are proposed.

SUMMARY

Nature and Scope of the Problem

The rationale for this study was to ascertain the extent to which students who underwent a behavior modification group training program of twelve one-hour sessions could positively influence their academic and behavioral assessments with selected teachers. A review of the literature detailed the need for students to become actively involved in positively changing unsatisfactory student-teacher relationships. The research further indicated that students could function effectively as behavior change agents in modifying the behavior of peers, themselves, and adults. Specifically, this study examined the ability of students to modify teacher classroom behavior.

Review of Related Research

The review of related literature revealed that students had demonstrated expertise as primary behavior change agents in three areas: As change agents for peer behavior (Rouse and Farb, 1974), as change agents for their own behavior (Chandler and Dinero, 1977), and as change agents for adult behavior (Novak, 1972). A critical review of the published literature reporting children as behavior change agents of adult behavior revealed that students could effectively modify teacher classroom behavior when the students were trained in the use of behavior management techniques (Halfacre, 1974). It was further ascertained that such training could create a more mutually positive feeling between teacher and student (Feldman and Prohaska, 1978; Klein, 1970; Novak, 1972).

It was ascertained that some of the research in the area of student management of the modification of adult behavior appeared to lack sufficient experimental control. Students were used to baseline their own behavior in situations in which no inter-rater reliability was established (Halfacre, 1974). Indirect effects of training students in the use of behavior management techniques for the purpose of changing adult behavior were also not examined (Gray, Graubard and Rosenberg, 1974).

Sample

The total sample consisted of 32 students enrolled in the ninth through twelfth grades who had been placed in supervised study at the school. Such placement is indicative of high-risk status for the student in the view of the school administration. From among seven available supervised study groups, two were randomly chosen to serve as the experimental group, and two were randomly chosen to serve as the control group.

Design

The design utilized for this research was the pretest-posttest control group design. The data were analyzed in a 2X2, mixed effects, repeated measures analysis of variance (ANOVA) format.

Instruments

Two instruments were utilized in this study. Grades were used as a measure of teacher-perceived academic performance. The School Behavior Checklist (SBC) Form A2 (Miller, 1977) was used as a measure of teacher-perceived classroom behavior.

Research Questions

This study sought answers to two specific questions:

1. To what extent can a student-managed behavior modification training program change the teachers' academic evaluations of such students?

2. To what extent can a student-managed behavior modification training program change the teachers' behavioral evaluations of such students?

Hypotheses

Two hypotheses were formulated in order to find answers to these questions. Hypothesis one relates to question one, and hypothesis two relates to question two.

Ho_1: There will be no difference among experimental and control groups between pretest and posttest means on Grades in targeted teachers' classes.

Ho_2: There will be no difference among experimental and control groups between pretest and posttest means on the School Behavior Checklist in targeted teachers' classes.

Findings

Grades

The research question associated with the variable Grades sought to determine the extent to which training in a student-managed program to modify teacher classroom behavior could affect teachers' academic assessments of students involved in modifying teacher behavior. Data obtained from official school records of students' grades in targeted teachers' classes prior to and following intervention were used in the statistical analysis.

A significant interaction effect was obtained on the repeated measures ANOVA from pretest to posttest with respect to group membership associated with the dependent variable Grades. Dunn's post-hoc follow-up procedure ascertained that the pair-wise means whose difference achieved significance were those for the experimental group from pretest to posttest. Based on these results, the hypothesis that there would be no difference in Grades between the experimental and control groups following intervention was rejected.

School Behavior

The research question associated with the variable

School Behavior sought to ascertain the extent to which training in a student-managed program to modify teacher classroom behavior could affect teachers' behavioral assessments of students involved in modifying teacher behavior. Data obtained from targeted teachers using the School Behavior Checklist filled out on experimental and control group students prior to and following intervention were used in the statistical analysis.

A significant interaction effect was obtained on the repeated measures ANOVA from pretest to posttest with respect to group membership associated with the dependent variable School Behavior. Dunn's post-hoc follow-up procedure ascertained that the pair-wise means whose difference achieved significance were those for the experimental group from pretest to posttest. Based on these results, the hypothesis that there would be no difference in teachers' behavioral ratings on the School Behavior Checklist between experimental and control groups following intervention was rejected.

CONCLUSIONS

The principle area of investigation of this study was teacher perception of academic and behavioral changes in students resulting from those students having been trained in behavior management techniques for the purpose

of indirectly modifying academic and behavioral teacher ratings of such students. Given the performance of the experimental group from pretest to posttest on Grades, it appears that students trained in the use of behavior management techniques can positively influence teachers' academic assessments. Further, given the performance of the experimental group from pretest to posttest on School Behavior, it appears that students trained in the use of behavior management techniques can positively influence teachers' behavioral assessments.

Research Conclusions

Within the limitations of the instruments employed in this study, and characteristics which may be unique to the sample used, the following research conclusions seem warranted:

1. These results appear to substantiate the findings of Benassi and Larson (1974). These authors asserted that either member of the child-adult relationship could be expected to be able to provide for a mutually positive change in the quality of the overall relationship. The results of this study indicate that students involved in the modification of teacher classroom behavior were able to create a more positive atmosphere in the classroom by

maintaining an awareness in the teacher that she or he was effectively teaching the experimental student.

2. Clement (1973) concluded from his research that a need existed for a structure by which students could begin to become responsible for their own therapy. The results of this study suggest that such a structure may exist in the form of student modification of teacher behavior.

3. The results of this study support the findings reported by Halfacre (1974) and Gray, Graubard and Rosenberg (1974). These authors ascertained that students were capable of positively changing the classroom behavior of teachers by training students in the use of behavior modification procedures on teachers.

4. The results of this study also support the findings of Briskin and Anderson (1973). These authors reported concomitant behavior changes among students involved in the modification of adult behavior. It appears that such a phenomenon may have taken place in this study. While it was the experimental students who were trained in the use of behavior management techniques, it should be emphasized that it was their targeted teachers who reported positive behavior changes among the experimental students.

Substantive Conclusions

In addition to conclusions based on the statistical results of this study, certain substantive conclusions, not based on the data, seem warranted. Many unsolicited comments were made by experimental students and their targeted teachers. Those comments seemed to fall into several basic categories, and they are as follows.

1. Over the course of the treatment program, each of the experimental students appeared to regard his targeted teacher much more highly than he did at the outset of the experimental program. Positive feelings such as these were often verbalized within the group setting. As the experimental students became proficient at identifying positive teacher behaviors, they became equally proficient at communicating their feelings about the positive teacher behavior back to their targeted teachers. The result of this phenomenon appeared to be that the students adopted a belief that they could and should share part of the responsibility for the increasingly positive behaviors of which they were the targets in class.

2. As experimental students began to process the positive effects of their own intervention with their targeted teachers, the students began to verbalize feelings of "being in charge" of what was happening to them in their classes. The experimental students identified the

training procedure as the process by which they could positively influence the course of events between themselves and their targeted teachers. Prior to treatment, the experimental students had verbalized a general belief that they felt they could bring no influence to bear on the problems they faced with their teachers.

3. Teachers targeted by the experimental students verbalized their increase in positive regard for the students who were in the process of modifying teacher classroom behavior. Because of the experimental students' efforts, many targeted teachers also reported more positive feelings about themselves, not only as teachers, but also as people.

4. Experimental students were taught to convey to the targeted teacher that, because of the teacher's efforts, specific learning had taken place for the student. As a result, many of the targeted teachers were able to correlate their teaching efforts with specific examples of student learning. These targeted teachers reported more confidence in their teaching ability because of positive evidence of their teaching efforts with at least one student. In addition, because of evidence of learning among experimental students, many targeted teachers reported feelings of increased commitment to the teaching profession. The teachers identified the progress made by the experimental students as a product of their own teaching skill.

RECOMMENDATIONS

Based on the conclusions of this research, the following recommendations are proposed. These recommendations are subdivided into two categories: those proposed for further research, and those proposed for implementation of the training procedure on which this study was based.

Research Recommendations

1. Researchers may wish to cross-check student perception of teacher behavior simultaneously with teacher perception of student behavior. Novak (1972) reported that appropriate positive feedback responses from students to teachers could lead to more positive behavioral evaluations from teachers toward students who were capable of giving such feedback responses to teachers. It may be worthy of further study to ascertain if the teacher or the student initiates positive feelings, or if an increase in positive regard is simultaneous under such circumstances.

2. Researchers may wish to examine the difference between academic and behavioral teacher assessments in targeted compared to non-targeted teachers' classes. It should be emphasized that each experimental student worked with only one targeted teacher. No systematic effort was made to examine performance in other classes. It may be

that a better source of control would be to compare the performance of the same students between targeted and non-targeted classes.

3. Researchers may also wish to employ different criteria than academic or behavioral performance. Assertiveness, self-concept, satisfaction or personal growth may be additional variables by which to judge the efficacy of this training procedure.

4. Researchers may wish to examine the effects of such a training program in settings other than the one in which this research took place. The results reported here may only be generalized to Mid-South, private, all-male preparatory schools. Public schools may lack some of the pressure normally associated with an exclusively college preparatory setting. Results obtained in a public school setting may differ from those reported here. Similarly, coeducational, all-female, parochial or elementary schools may also provide settings in which results different from those reported here may be expected.

Implementation Recommendations

1. Counselors may successfully utilize this procedure with students reporting difficulties in their relationships other than those found in the classroom between teacher and student. It may be that training in the use

of behavior management techniques could benefit students in their relationships with their peers, their parents, or other adults. Several experimental students indicated to the trainer that the training program seemed to have clear applications, with some modification, with coaches and friends.

2. Counseling professionals may choose to utilize such a training procedure when carried out on an individual rather than a group basis. The group format was chosen in this instance because the group setting provided for feedback and peer support -- factors believed by the trainer to be important catalysts in the success of the training program.

3. It is recommended that counselors who are familiar with behavior management techniques consider utilizing this training procedure. It seems to be particularly effective in cases in which the student perceives him or herself to be involved in a negative student-teacher relationship. The results of this study suggest that training such students in the use of behavior modification techniques can positively influence teachers' assessments across both subjective and objective criteria.

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APPENDIX A

Spearman-Brown (SB) and Test-Retest (TR) Reliability Coefficients for Form A2
The School Behavior Checklist

SBC Scale	SB	TR
Low Need Achievement	.88	.99
Aggression	.90	.83
Anxiety	.72	.80
Academic Disability	.70	.70
Hostile Isolation	.44	.40
Extraversion	.72	.74
TOTAL DISABILITY	.93	.89

Miller (1977), p. 18.

APPENDIX B

Letter from the Principal

MEMPHIS UNIVERSITY SCHOOL
6191 PARK AVENUE
MEMPHIS, TENNESSEE 38138

November 13, 1980

TO WHOM IT MAY CONCERN:

This is to indicate that I have read the prospectus submitted by Mr. Stephen Oehmen and understand that he is working on a research project involving the positive modification of teacher classroom behavior by students. He has our permission to carry on this research during the second quarter of the 1980-81 school year within the limitations described to him.

Sincerely,

Leigh W. MacQueen
Principal, Upper School

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